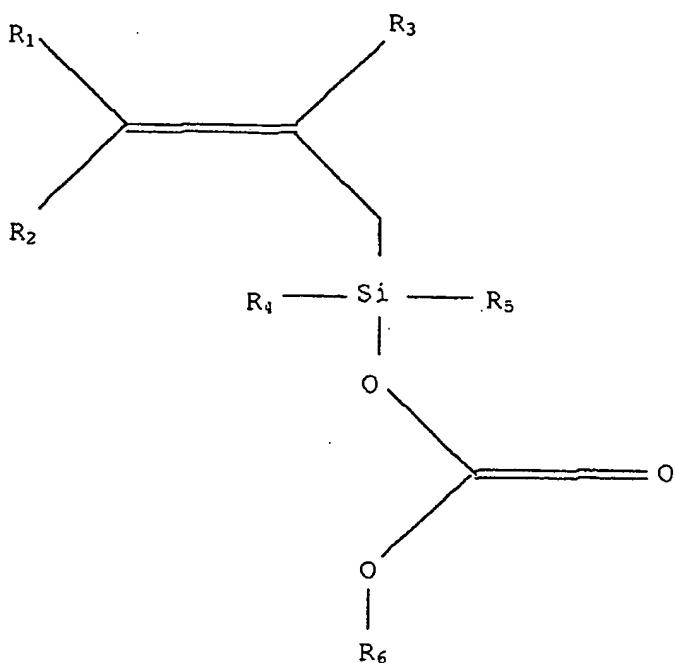


ART 34 AMDT

New patent claims  
03.19.2004

- 1 -

1. A polymerizable composition for the production of a resist, comprising at least one unsaturated, polymerizable monomer having at least one silicon atom and at least one carbonyl group, a monomer being characterized by the following general formula (I):



10 in which the meanings are as follows:

R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub>: H or alkyl radicals, in particular methyl radicals,

15 R<sub>4</sub>, R<sub>5</sub> : alkyl radicals, in particular methyl radicals, further silicon units, e.g. siloxanes

R<sub>6</sub> : alkyl radical, in particular tert-butyl radical,

20 it being possible for R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub>, R<sub>4</sub>, R<sub>5</sub>, R<sub>6</sub> to be identical or different.

ART 34 AMDT

New patent claims  
03.19.2004

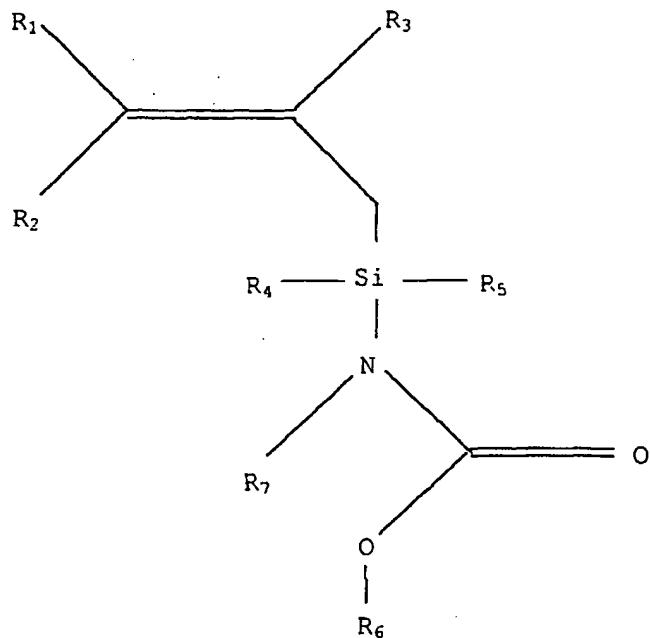
- 1a -

PCT/DE03/02502  
200207035/IT456

2. A polymerizable composition for the production of a resist, comprising at least one unsaturated, polymerizable monomer having at least one silicon atom and at least one carbonyl group, a monomer being characterized by

5

the following general formula (II)



5 in which the meanings are as follows:

$R_1, R_2, R_3$ : H or alkyl radicals, in particular methyl radicals,

$R_6$  : alkyl radical, in particular tert-butyl radical,

it being possible for  $R_1$ ,  $R_2$ ,  $R_3$ ,  $R_4$ ,  $R_5$ ,  $R_6$ ,  $R_7$  to be identical or different.

20 3. The polymerizable composition as claimed in at least one of claims 1 or 2, **characterized in that**

AMENDED SHEET

New patent claims  
03.19.2004

- 2a -

PCT/DE03/02502  
200207035/IT456

at least one alkyl radical has a chain length of C<sub>1</sub> to C<sub>8</sub>.

4. The polymerizable composition as claimed in at  
5 least one of the preceding claims, **characterized  
in that**

monomers as claimed in claim 1, 2 and/or other monomers, in particular maleic anhydride, styrene, p-hydroxystyrene or methacrylic acid, are present for the polymerization.

5

5. A polymer **prepared by** polymerization of at least one of the compositions as claimed in any of claims 1 to 4.
- 10 6. A resist **characterized by** a content of from 2 to 30% of polymer as claimed in claim 5, a content of from 70 to 98% of solvent and a content of from 0.1 to 10% of photo acid generator.
- 15 7. The resist as claimed in claim 6, **characterized by** a content of methoxypropyl acetate, ethyl acetate, ethyl lactate, cyclohexanone, gamma-butyrolactone and/or methyl ethyl ketone as a solvent.
- 20 8. The resist as claimed in claim 6 or 7, **characterized by** a content of Crivello salt, diphenylsulfonium sulfonate, diphenyliodonium sulfate, phthalimidosulfonate and/or ortho-nitrobenzylsulfonate as a photo acid generator.
- 25 9. The resist as claimed in at least one of claims 6 to 8 for use in an electron beam recording process.
- 30 10. A lithography process for the production of a structure on a substrate, in particular of a structure for a lithography mask for the production of semiconductor components, **characterized in that** a resist as claimed in any of claims 6 to 8 is used.

ART 34 AMDT

New patent claims  
03.19.2004

- 3a -

PCT/DE03/02502  
200207035/IT456

11. The lithography process as claimed in claim 9,  
**characterized in that**

a) a mask blank is coated with a resist as claimed  
5 in claim 8,

*ART 34 AMDT*

b) the resist is recorded on by means of a laser and/or electron beam recorder,

5 c) the structure produced by the recording in the resist is developed,

d) the mask blank is dry-etched.

12. The lithography process as claimed in claim 9 or  
10, **characterized in that** a heating step is carried out after recording on the resist.

13. The lithography process as claimed in at least one of claims 9 to 11, **characterized in that** the development is effected with an aqueous alkaline developer, in particular a 2.38% strength aqueous tetramethylammonium hydroxide solution or a TMAH developer.  
15